

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/408,905

DATE: 10/12/1999
TIME: 11:18:47

Input Set: I408905.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

ENTERED

```

1  <110> APPLICANT: St. Elizabeth's Medical Center of Boston, Inc.
2      Walsh, Kenneth
3  <120> TITLE OF INVENTION: AKT COMPOSITIONS FOR ENHANCING SURVIVAL
4      OF CELLS
5  <130> FILE REFERENCE: S1237/7011/ERP/KA
6  <140> CURRENT APPLICATION NUMBER: US/09/408,905
7  <141> CURRENT FILING DATE: 1999-09-29
8  <150> EARLIER APPLICATION NUMBER: US 60/102,740
9  <151> EARLIER FILING DATE: 1998-10-02
10 <160> NUMBER OF SEQ ID NOS: 8
11 <170> SOFTWARE: FastSEQ for Windows Version 3.0
12 <210> SEQ ID NO 1
13 <211> LENGTH: 2610
14 <212> TYPE: DNA
15 <213> ORGANISM: Homo Sapiens
16 <400> SEQUENCE: 1
17      atcctggggac agggcacagg gccatctgtc accaggggct tagggaaggc cgagccagcc      60
18      tgggtcaaag aagtcaaagg ggctgcctgg aggaggcagc ctgtcagctg gtgcatcaga      120
19      ggctgtggcc aggccagctg ggctcgggga gcgccagcct gagaggagcg cgtgagcgctc      180
20      gcggggagcct cgggcacccat gagcgacgtg gctattgtga aggagggttg gctgcacaaa      240
21      cgaggggagtg acatcaagac ctggcggcca cgctacttcc tcctcaagaa tgatggcacc      300
22      ttcatgggct acaaggagcg gccgcaggat gtggaccaac gtgaggctcc cctcaacaac      360
23      ttctctgtgg cgcagtggca gctgatgaag acggagcggc cccggcccaa caccttcac      420
24      atccgctgcc tgcagtggac cactgtcatc gaacgcacct tccatgtgga gactcctgag      480
25      gagcgggagg agtggacaac cgccatccag actgtggctg acggcctcaa gaagcaggag      540
26      gaggaggaga tggacttccg gtcgggctca ccagtgaca actcaggggc tgaagagatg      600
27      gaggtgtccc tggccaagcc caagcaccgc gtgaccatga acgagtttga gtacctgaag      660
28      ctgctgggca agggcacttt cggcaagggtg atcctgggtga aggagaaggc cacaggccgc      720
29      tactacgcca tgaagatcct caagaaggaa gtcacgtgtg ccaaggacga ggtggccac      780
30      aactcaccg agaaccgcgt cctgcagaac tccaggcacc ccttcctcac agccctgaag      840
31      tactctttcc agaccacga ccgcctctgc tttgtcatgg agtacgcaa cgggggagag      900
32      ctgttcttcc acctgtcccg ggaacgtgtg ttctccgagg accgggcccg cttctatggc      960
33      gctgagattg tgtcagccct ggactacctg cactcggaga agaactgtgt gtaccgggac      1020
34      ctcaagctgg agaacctcat gctggacaag gacgggcaca ttaagatcac agacttcggg      1080
35      ctgtgcaagg aggggatcaa ggacggtgcc accatgaaga ccttttgagg cacacctgag      1140
36      tacctggccc ccgaggtgct ggaggacaat gactacggcc gtgcagtgga ctggtggggg      1200
37      ctgggcgtgg tcatgtacga gatgatgtgc ggtcgcctgc cttctacaa ccaggaccat      1260
38      gagaagcttt ttgagctcat cctcatggag gagatccgct tcccgcgcac gcttgggtccc      1320
39      gaggccaagt ccttgctttc agggtgctc aagaaggacc ccaagcagag gcttggcggg      1380
40      ggctccgagg acgccaagga gatcatgcag catcgcttct ttgccggtat cgtgtggcag      1440
41      cacgtgtacg agaagaagct cagccccacc ttcaagcccc aggtcacgtc ggagactgac      1500
42      accaggtatt ttgatgagga gttcacggcc cagatgatca ccatcacacc acctgaccaa      1560
43      gatgacagca tggagtgtgt ggacagcgag cgcaggcccc acttccccca gttctcctac      1620
44      tcggccagca gcacggcctg aggcggcggt ggactgcgct ggacgatagc ttggagggat      1680

```

PAGE: 2

RAW SEQUENCE LISTING PATENT APPLICATION US/09/408,905

DATE: 10/12/1999

TIME: 11:18:47

Input Set: I408905.RAW

```

45      ggagaggcgg cctcgtgccg tgatctgtat ttaatggttt ttatttctcg ggtgcatttg      1740
46      agagaagcca cgctgtcctc tcgagcccag atggaaagac gtttttgtgc tgtgggcagc      1800
47      accctccccc gcagcggggg agggaaagaaa actatcctgc gggttttaat ttatttcacg      1860
48      cagtttggtc tccgggtgtg gcctcagccc tcagaacaat ccgattcacg tagggaaatg      1920
49      ttaaggactt ctacagctat gcgcaatgtg gcattggggg gccgggcagg tcctgcccac      1980
50      gtgtccctc actctgtcag ccagccgccc tgggctgtct gtcaccagct atctgtcatc      2040
51      tctctggggc cctgggcctc agttcaacct ggtggcacca gatgcaacct cactatggta      2100
52      tgctggccag caccctctcc tgggggtggc aggcacacag cagcccccca gcactaaggc      2160
53      cgtgtctctg aggacgtcat cggaggctgg gcccttggga tgggaccagg gatgggggat      2220
54      gggccagggt ttaccagtg ggacagagga gcaaggttta aatttgttat tgtgtattat      2280
55      gttgttcaaa tgcatttttg gggtttttaa tctttgtgac aggaaagccc tcccccttcc      2340
56      ccttctgtgt cacagttctt ggtgactgtc ccaccggagc ctccccctca gatgatctct      2400
57      ccacggtagc acttgacctt ttcgacgctt aacctttccg ctgtcgcccc aggccctccc      2460
58      tgactccctg tgggggtggc catccctggg cccctccacg cctcctggcc agacgtgccc      2520
59      gctgccgctg caccacggcg tttttttaca acattcaact ttagtatttt tactattata      2580
60      atataatatg gaaccttccc tccaaattct      2610

```

61 <210> SEQ ID NO 2

62 <211> LENGTH: 480

63 <212> TYPE: PRT

64 <213> ORGANISM: Homo Sapiens

65 <220> FEATURE:

66 <221> NAME/KEY: DOMAIN

67 <222> LOCATION: (5)...(108)

68 <223> OTHER INFORMATION: Pleckstrin Homology

69 <220> FEATURE:

70 <221> NAME/KEY: DOMAIN

71 <222> LOCATION: (150)...(408)

72 <223> OTHER INFORMATION: Serine-Threonine Kinase

73 <400> SEQUENCE: 2

```

74      Met Ser Asp Val Ala Ile Val Lys Glu Gly Trp Leu His Lys Arg Gly
75      1          5          10          15
76      Glu Tyr Ile Lys Thr Trp Arg Pro Arg Tyr Phe Leu Leu Lys Asn Asp
77      20          25          30
78      Gly Thr Phe Ile Gly Tyr Lys Glu Arg Pro Gln Asp Val Asp Gln Arg
79      35          40          45
80      Glu Ala Pro Leu Asn Asn Phe Ser Val Ala Gln Cys Gln Leu Met Lys
81      50          55          60
82      Thr Glu Arg Pro Arg Pro Asn Thr Phe Ile Ile Arg Cys Leu Gln Trp
83      65          70          75          80
84      Thr Thr Val Ile Glu Arg Thr Phe His Val Glu Thr Pro Glu Glu Arg
85      85          90          95
86      Glu Glu Trp Thr Thr Ala Ile Gln Thr Val Ala Asp Gly Leu Lys Lys
87      100         105         110
88      Gln Glu Glu Glu Glu Met Asp Phe Arg Ser Gly Ser Pro Ser Asp Asn
89      115         120         125
90      Ser Gly Ala Glu Glu Met Glu Val Ser Leu Ala Lys Pro Lys His Arg
91      130         135         140
92      Val Thr Met Asn Glu Phe Glu Tyr Leu Lys Leu Leu Gly Lys Gly Thr
93      145         150         155         160
94      Phe Gly Lys Val Ile Leu Val Lys Glu Lys Ala Thr Gly Arg Tyr Tyr

```

PAGE: 3

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/408,905

DATE: 10/12/1999

TIME: 11:18:47

Input Set: I408905.RAW

95				165				170				175				
96	Ala	Met	Lys	Ile	Leu	Lys	Lys	Glu	Val	Ile	Val	Ala	Lys	Asp	Glu	Val
97				180				185				190				
98	Ala	His	Thr	Leu	Thr	Glu	Asn	Arg	Val	Leu	Gln	Asn	Ser	Arg	His	Pro
99				195				200				205				
100	Phe	Leu	Thr	Ala	Leu	Lys	Tyr	Ser	Phe	Gln	Thr	His	Asp	Arg	Leu	Cys
101				210				215				220				
102	Phe	Val	Met	Glu	Tyr	Ala	Asn	Gly	Gly	Glu	Leu	Phe	Phe	His	Leu	Ser
103				225				230				235				240
104	Arg	Glu	Arg	Val	Phe	Ser	Glu	Asp	Arg	Ala	Arg	Phe	Tyr	Gly	Ala	Glu
105					245					250					255	
106	Ile	Val	Ser	Ala	Leu	Asp	Tyr	Leu	His	Ser	Glu	Lys	Asn	Val	Val	Tyr
107				260					265					270		
108	Arg	Asp	Leu	Lys	Leu	Glu	Asn	Leu	Met	Leu	Asp	Lys	Asp	Gly	His	Ile
109				275				280				285				
110	Lys	Ile	Thr	Asp	Phe	Gly	Leu	Cys	Lys	Glu	Gly	Ile	Lys	Asp	Gly	Ala
111				290				295				300				
112	Thr	Met	Lys	Thr	Phe	Cys	Gly	Thr	Pro	Glu	Tyr	Leu	Ala	Pro	Glu	Val
113				305				310				315				320
114	Leu	Glu	Asp	Asn	Asp	Tyr	Gly	Arg	Ala	Val	Asp	Trp	Trp	Gly	Leu	Gly
115					325					330					335	
116	Val	Val	Met	Tyr	Glu	Met	Met	Cys	Gly	Arg	Leu	Pro	Phe	Tyr	Asn	Gln
117				340					345					350		
118	Asp	His	Glu	Lys	Leu	Phe	Glu	Leu	Ile	Leu	Met	Glu	Glu	Ile	Arg	Phe
119				355				360				365				
120	Pro	Arg	Thr	Leu	Gly	Pro	Glu	Ala	Lys	Ser	Leu	Leu	Ser	Gly	Leu	Leu
121				370				375				380				
122	Lys	Lys	Asp	Pro	Lys	Gln	Arg	Leu	Gly	Gly	Gly	Ser	Glu	Asp	Ala	Lys
123				385				390				395				400
124	Glu	Ile	Met	Gln	His	Arg	Phe	Phe	Ala	Gly	Ile	Val	Trp	Gln	His	Val
125					405					410					415	
126	Tyr	Glu	Lys	Lys	Leu	Ser	Pro	Pro	Phe	Lys	Pro	Gln	Val	Thr	Ser	Glu
127				420					425					430		
128	Thr	Asp	Thr	Arg	Tyr	Phe	Asp	Glu	Glu	Phe	Thr	Ala	Gln	Met	Ile	Thr
129				435				440				445				
130	Ile	Thr	Pro	Pro	Asp	Gln	Asp	Asp	Ser	Met	Glu	Cys	Val	Asp	Ser	Glu
131				450				455				460				
132	Arg	Arg	Pro	His	Phe	Pro	Gln	Phe	Ser	Tyr	Ser	Ala	Ser	Ser	Thr	Ala
133				465			470				475					480

<210> SEQ ID NO 3

<211> LENGTH: 1254

<212> TYPE: DNA

<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 3

139	atgaagacgg	agcggccccc	gcccacacc	ttcatcatcc	gctgcctgca	gtggaccact	60
140	gtcatcgaac	gcaccttcca	tgtggagact	cctgaggagc	gggaggagt	gacaaccgcc	120
141	atccagactg	tggccgacgg	cctcaagaag	caggaggagg	aggagatgga	cttccggtcg	180
142	ggctcaccca	gcgacaactc	aggggccgaa	gagatggagg	tgtccctggc	caagcccaag	240
143	caccgcgtga	ccatgaacga	gtttgagtac	ctgaagctgc	tgggcaagg	cactttcggc	300
144	aaggatgatcc	tggatgaagga	gaaggccaca	gcgtactacg	ccatgaagat	cctcaagaag	360

PAGE: 4

RAW SEQUENCE LISTING PATENT APPLICATION US/09/408,905

DATE: 10/12/1999

TIME: 11:18:47

Input Set: I408905.RAW

```

145      gaagtcacg tggccaagga cgaggtggcc cacacactca ccgagaaccg cgtccagcag      420
146      aactccaggc accccttcct cactcgcttg aagtactctt tccagaccca cgaccgcctc      480
147      tgctttgtca tggagtacgc caacgggggc gagctgttct tccacctgtc ccgggagcgt      540
148      gtgttcgccc aggaccgggc ccgcttctat ggcgctgaga ttgtgtcagc cctggactac      600
149      ctgcactcgg agaagaacgt ggtgtaccgg gacctcaagc tggagaacct catgctggac      660
150      aaggacgggc acattaagat cacagacttc gggctgtgca aggaggggat caaggacggt      720
151      gccaccatga agaccttttg cggcacacct gactacctgg ccccgagggt gctggaggac      780
152      aatgactacg gccgtgcagt ggactggtgg gggctgggcg tggatcatga cgagatgatg      840
153      tgcggtcgcc tgcccttcta caaccaggac catgagaagc tttttgagct catcctcatg      900
154      gaggagatcc gcttcccgcg cacgcttggt cccgaggcca agtccttgct ttcagggctg      960
155      ctcaagaagg accccaagca gaggcttggc gggggtcccg aggacgcca ggagatcatg      1020
156      cagcatcgct tctttaccgg tatcgtgtgg cagcacgtgt acgagaagaa gctcagccca      1080
157      cccttcaagc cccaggtcac gtcggagact gacaccaggt attttgatga ggagttcacg      1140
158      gccagatga tcaccatcac accacctgac caagatgaca gcatggagtg tgtggacagc      1200
159      gagcgcaggc ccacttccc ccagttctcc tactcgccca gcgcgacggc ctga      1254
160      <210> SEQ ID NO 4
161      <211> LENGTH: 417
162      <212> TYPE: PRT
163      <213> ORGANISM: Homo Sapiens
164      <400> SEQUENCE: 4
165      Met Lys Thr Glu Arg Pro Arg Pro Asn Thr Phe Ile Ile Arg Cys Leu
166      1          5          10          15
167      Gln Trp Thr Thr Val Ile Glu Arg Thr Phe His Val Glu Thr Pro Glu
168      20          25          30
169      Glu Arg Glu Glu Trp Thr Thr Ala Ile Gln Thr Val Ala Asp Gly Leu
170      35          40          45
171      Lys Lys Gln Glu Glu Glu Met Asp Phe Arg Ser Gly Ser Pro Ser
172      50          55          60
173      Asp Asn Ser Gly Ala Glu Glu Met Glu Val Ser Leu Ala Lys Pro Lys
174      65          70          75          80
175      His Arg Val Thr Met Asn Glu Phe Glu Tyr Leu Lys Leu Leu Gly Lys
176      85          90          95
177      Gly Thr Phe Gly Lys Val Ile Leu Val Lys Glu Lys Ala Thr Ala Tyr
178      100         105         110
179      Tyr Ala Met Lys Ile Leu Lys Lys Glu Val Ile Val Ala Lys Asp Glu
180      115         120         125
181      Val Ala His Thr Leu Thr Glu Asn Arg Val Gln Gln Asn Ser Arg His
182      130         135         140
183      Pro Phe Leu Thr Arg Leu Lys Tyr Ser Phe Gln Thr His Asp Arg Leu
184      145         150         155         160
185      Cys Phe Val Met Glu Tyr Ala Asn Gly Gly Glu Leu Phe Phe His Leu
186      165         170         175
187      Ser Arg Glu Arg Val Phe Ala Glu Asp Arg Ala Arg Phe Tyr Gly Ala
188      180         185         190
189      Glu Ile Val Ser Ala Leu Asp Tyr Leu His Ser Glu Lys Asn Val Val
190      195         200         205
191      Tyr Arg Asp Leu Lys Leu Glu Asn Leu Met Leu Asp Lys Asp Gly His
192      210         215         220
193      Ile Lys Ile Thr Asp Phe Gly Leu Cys Lys Glu Gly Ile Lys Asp Gly
194      225         230         235         240

```

PAGE: 5

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/408,905

DATE: 10/12/1999

TIME: 11:18:47

Input Set: I408905.RAW

195	Ala Thr Met Lys Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu
196	245 250 255
197	Val Leu Glu Asp Asn Asp Tyr Gly Arg Ala Val Asp Trp Trp Gly Leu
198	260 265 270
199	Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr Asn
200	275 280 285
201	Gln Asp His Glu Lys Leu Phe Glu Leu Ile Leu Met Glu Glu Ile Arg
202	290 295 300
203	Phe Pro Arg Thr Leu Gly Pro Glu Ala Lys Ser Leu Leu Ser Gly Leu
204	305 310 315 320
205	Leu Lys Lys Asp Pro Lys Gln Arg Leu Gly Gly Gly Ser Glu Asp Ala
206	325 330 335
207	Lys Glu Ile Met Gln His Arg Phe Phe Thr Gly Ile Val Trp Gln His
208	340 345 350
209	Val Tyr Glu Lys Lys Leu Ser Pro Pro Phe Lys Pro Gln Val Thr Ser
210	355 360 365
211	Glu Thr Asp Thr Arg Tyr Phe Asp Glu Glu Phe Thr Ala Gln Met Ile
212	370 375 380
213	Thr Ile Thr Pro Pro Asp Gln Asp Asp Ser Met Glu Cys Val Asp Ser
214	385 390 395 400
215	Glu Arg Arg Pro His Phe Pro Gln Phe Ser Tyr Ser Pro Ser Ala Thr
216	405 410 415
217	Ala

218 <210> SEQ ID NO 5

219 <211> LENGTH: 2626

220 <212> TYPE: DNA

221 <213> ORGANISM: Mus Musculus

222 <400> SEQUENCE: 5

223	ccgggaccag cggacggacc gagcagcgtc ctgcggcccg caccgcggcg gccagatcc	60
224	ggccagcagc gcgcgcccgg acgcccgtgc cttcagccgg ccccgcccag cgcccgccg	120
225	cgggatgcgg agcggcgggc gcccgaggcc gggcccggc taggcccagt cgccgcacg	180
226	cggcggcccc acgctgcggc caggccggct gggctcagcc taccgagaag agactctgat	240
227	catcatccct gggttacccc tgtctctggg ggccacggat accatgaacg acgtagccat	300
228	tgtgaaggag ggctggctgc acaaacgagg ggaatatatt aaaacctggc ggccacgcta	360
229	cttcctcctc aagaacgatg gcacctttat tggctacaag gaacggcctc aggatgtgga	420
230	tcagcgagag tccccactca acaacttctc agtggcacia tgccagctga tgaagacaga	480
231	gcggccaagg cccaacacct ttatcatccg ctgcctgcag tggaccacag tcattgagcg	540
232	caccttccat gtggaaacgc ctgaggagcg ggaagaatgg gccaccgcca ttcagactgt	600
233	ggccgatgga ctcaagaggc aggaagaaga gacgatggac ttccgatcag gctcaccag	660
234	tgacaactca ggggctgaag agatggaggt gtccctggcc aagcccaagc accgtgtgac	720
235	catgaacgag tttgagtacc tgaaactact gggcaagggc acctttggga aagtgtattct	780
236	ggtgaaagag aaggccacag gccgctacta tgccatgaag atcctcaaga aggaggtcat	840
237	cgtcgccaaag gatgaggttg cccacacgct tactgagaac cgtgtcctgc agaactctag	900
238	gcatcccttc cttacggccc tcaagtactc attccagacc caccgaccgc tctgctttgt	960
239	catggagtat gccaacgggg gcgagctctt ctccacctg tctcgagagc gcgtgttctc	1020
240	cgaggaccgg gcccgtttct atgggtgcgga gattgtgtct gccctggact acttgcactc	1080
241	cgagaagaac gtggtgtacc gggacctgaa gctggagaac ctcatgctgg acaaggacgg	1140
242	gcacatcaag ataacggact tcgggctgtg caaggagggg atcaaggatg gtgccactat	1200
243	gaagacattc tgcggaacgc cggagtacct ggcccctgag gtgctggagg acaacgacta	1260
244	cggccgtgca gtggactggt gggggctggg cgtggtcatg tatgagatga tgtgtggccg	1320

PAGE: 6

VERIFICATION SUMMARY
PATENT APPLICATION US/09/408,905

DATE: 10/12/1999
TIME: 11:18:47

Input Set: I408905.RAW

Line ? Error/Warning

Original Text
